

REMARKS

Prior to entry of this amendment, claims 1-35 are currently pending in the subject application. Claims 9-18 and 27-35 have been withdrawn in connection with the election requirement mailed on December 28, 2005. By the instant amendment, claims 1 and 8 are amended, and dependent claims 36-40 are added. Claims 1 and 19 are independent.

Applicants appreciate the Examiner's acknowledgement of applicants' claim for foreign priority and receipt of a certified copy of the priority document.

Applicants also appreciate the Examiner's acceptance of the drawings filed on January 21, 2004.

Applicants further appreciate the Examiner's consideration of applicants' Information Disclosure Statements filed on January 21, 2004, September 13, 2004 and May 2, 2005.

Claims 1-8, 19-26 and 36-40 are presented to the Examiner for further or initial prosecution on the merits.

A. Introduction

In the outstanding Office action, the Examiner rejected claims 1-8 and 19-26 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,515,085 to Hotomi et al. ("the Hotomi et al. reference"), and rejected claims 6 and 24 under 35 U.S.C. § 103(a) as being unpatentable over the Hotomi reference.

B. Asserted Anticipation Rejection of Claims 1-8 and 19-26

In the outstanding Office action, the Examiner rejected claims 1-8 and 19-26 under 35 U.S.C. § 102(b) as being anticipated by the Hotomi et al. reference. Applicants respectfully submit that the Hotomi et al. reference fails to disclose, or even suggest, each and every element of the rejected claims for at least the reasons set forth below.

Claim 1 is amended by the instant amendment, and presently recites, *inter alia*, "wherein the droplet ejector is configured to eject the droplet of fluid upon application of the

stimulus.” Applicants respectfully submit that the Hotomi et al. reference fails to disclose or suggest this aspect of claim 1. In the outstanding Office action, the Examiner asserted that the Hotomi et al. reference discloses “a volumetric structure . . . sensitive to an external stimulus and being capable of varying in size to eject a drop of fluid,” referring to element 26 in FIG. 14 and col. 4, lines 33-40 of the Hotomi et al. reference. However, applicants respectfully submit that the structure described in the Hotomi et al. reference ejects fluid upon *removal* of the external stimulus, rather than upon application of the stimulus as presently recited in claim 1.

In particular, element 26 in FIG. 14 of the Hotomi et al. reference is a volume changeable liquid, or EVL. *The Hotomi et al. reference, col. 6, lines 23-30.* The EVL decreases in volume upon application of an electric field thereto. *The Hotomi et al. reference, col. 3, lines 23-28.* The ink-jet type recorder disclosed in the Hotomi et al. reference does not eject ink when the electric field is applied to the EVL (ink ejection is “impossible” when the electric field is applied). Rather, the recorder ejects ink upon the removal of the electric field. *The Hotomi et al. reference, col. 4, lines 21-40.* Therefore, applicants respectfully submit that the Hotomi et al. reference fails to disclose, or even suggest, a droplet ejector wherein a droplet is ejected upon *application* of the stimulus, as presently recited in claim 1. Therefore, claim 1 is believed to be allowable over the Hotomi et al. reference, as are claims 2-8, which depend from claim 1.

Moreover, regarding the rejection of dependent claim 2, applicants respectfully disagree with the Examiner’s characterization of the Hotomi et al. reference. In the outstanding Office action, the Examiner asserted that the Hotomi et al. reference discloses a “stimulus generator (31 and 32) [that] applies the stimulus to the volumetric structure to expand the size of the volumetric structure (column 4, lines 33-37).” *Office action of Mar. 6, 2006, paragraph no. 3, page 3.* Applicants respectfully disagree, and submit that the Hotomi

et al. reference discloses just the opposite. As stated in the Hotomi et al. reference, “When the voltage impressers 7 halt the impress of the voltage to the electrodes 4, the electric field disappears, increasing the volume of the viscosity changeable liquid.” *The Hotomi et al. reference, col. 4, lines 34-36, emphasis added.* Accordingly, applicants respectfully submit that the Hotomi et al. reference fails to disclose, or even suggest, a stimulus generator that “applies the stimulus to the volumetric structure to expand the size of the volumetric structure,” as recited in claim 2.

With regards to the rejection of independent claim 19 over the Hotomi et al. reference, applicants respectfully disagree with the Examiner’s characterization of the Hotomi et al. reference, and respectfully submit that the Hotomi et al. reference fails to disclose each and every element of claim 19. Claim 19 recites, in part,

a barrier layer, which is stacked on the substrate . . . ;  
a nozzle plate, which is stacked on the barrier layer and in  
which a nozzle, through which an ink droplet is ejected, is formed;

In the outstanding Office action, the Examiner asserted that element 29 in FIG. 14 of the Hotomi et al. reference is a barrier layer. The Examiner further asserted that element 19 in FIG. 14 is a nozzle plate stacked on the barrier layer. *Office action of Mar. 6, 2006, at paragraph no. 4, page 4.* However, applicants respectfully submit that the Hotomi et al. reference fails to disclose a nozzle plate stacked on a barrier layer. In particular, in FIG. 14, there are only two features that could be considered to be stacked on element 29, viz., electrodes 31 and 32. Further, there is no nozzle plate disclosed in FIG. 14, and the Hotomi et al. reference fails to refer to *any* element indicated by the reference numeral 19. Accordingly, applicants respectfully submit that the Examiner failed to show that the Hotomi et al. reference discloses each and every element of claim 19. Therefore, claim 19 is believed to be allowable over the Hotomi et al. reference, as are claims 20-26, which depend from claim 19.

In view of the above, applicants respectfully submit that the Hotomi et al. reference fails to anticipate the rejected claims for at least the reason that the Hotomi et al. reference fails to disclose each and every element of claims 1-8 and 19-26. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

C. Asserted Obviousness Rejection of Claims 6 and 24

In the outstanding Office action, the Examiner rejected claims 6 and 24 under 35 U.S.C. § 103(a) as being unpatentable over the Hotomi et al. reference. Applicants respectfully traverse this rejection.

Claims 6 and 24 recite particular shapes for the volumetric structure. In the outstanding Office action, the Examiner admitted that the Hotomi et al. reference does not explicitly teach the volumetric structure having the shapes recited in claims 6 and 24. Applicants agree. However, the Examiner asserted that the claimed shapes are obvious in view of the Hotomi et al. reference, stating,

It would have been obvious to one of ordinary skill in the art to make the volumetric structure to have a columnar, hexahedral, or a cylindrical shape since it has been held that a particular configuration is insignificant or is anything more than one of numerous configurations a person of ordinary skill in the art would find obvious. See *Graham v. John Deere Co.*, 383 US 1, 148 USPQ 459

*Office action of Mar. 6, 2006, paragraph no. 7, page 6.*

Applicants respectfully submit that *Graham* is inapposite where, as here, the cited prior art fails to disclose or suggest *any* shape whatsoever. In particular, applicants note that the EVL disclosed in the Hotomi et al. reference is a liquid. See, e.g., *the Hotomi et al. reference at col. 3, lines 1-3*. For example, in the first embodiment in the Hotomi et al. reference, the EVL is a liquid that is mixed with the ink. *The Hotomi et al. reference, col. 4, lines 2-4*. In the other embodiment, the EVL is a separate liquid phase. *The Hotomi et al. reference, col. 6, lines 29-32*. Since the EVL disclosed in the Hotomi et al. reference is a

liquid, applicants respectfully submit that it would not be obvious to one of ordinary skill in the art to form the EVL liquid into any particular shape, much less the shapes recited in claims 6 and 24.

In view of the above, applicants respectfully submit that claims 6 and 24 are not obvious under 35 U.S.C. § 103(a) as being unpatentable over the Hotomi et al. reference. Moreover, as claims 6 and 24 depend from claims 1 and 19, respectively, they are believed to be allowable for at least the reasons set forth above regarding claims 1 and 19. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

D. New Claims and other Claim Amendments

Claims 36-40 are added by the instant amendment. No new matter is added and support for claims 36-40 may be found in the application as originally filed. Claims 36-40 depend from claim 1 and, to the extent they are not generic, read on Species I, which was elected in response to the election requirement mailed on December 28, 2005. Applicants respectfully request entry and examination of claims 36-40.

Applicants also note that claim 8 is amended to more particularly recite aspects of the present invention.

E. Conclusion

In view of the above, applicants respectfully submit that claims 1-8, 19-26 and 36-40 are allowable over the cited prior art. As claims 1 and 19 are generic to withdrawn claims 9-18 and 27-35, respectively, applicants respectfully request that the election of species requirement of December 28, 2005, be withdrawn and claims 9-18 and 27-35 be rejoined.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

LEE & MORSE, P.C.

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**PETITION and**  
**DEPOSIT ACCOUNT CHARGE AUTHORIZATION**

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.